

1 This listing of claims will replace all prior versions, and listings, of claims
2 in the application.

3
4 **Listing of Claims:**

5
6 Claim 1 (Currently amended): A method of synchronizing asynchronous
7 time-based and motion capture data in a system in which the time-based data and
8 the motion data are transmitted by a server over a network to a client, the method
9 comprising:

10 retrieving a time-based data stream and a motion capture data stream at the
11 server, each stream comprising frames of data;

12 variably buffering one of the time-based data stream and the motion capture
13 data stream at the server to produce two streams having synchronized frames; and

14 using the synchronized frames at the client for playback of synchronized
15 motion capture data and time-based data to a user.

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17 Claim 2 (Cancelled)

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19 Claim 3 (Currently amended): The method of claim 1 further including
20 calculating a difference between delays for the motion capture data stream and the
21 time-based data stream through the server to determine an amount of variable
22 buffering for a faster of the two streams.

1 Claim 4 (Original): The method of claim 1 further including transferring
2 only those data values for a frame that have changed since a last frame was
3 transmitted.

4
5 Claim 5 (Original): The method of claim 1 wherein the network is the
6 Internet.

7
8 Claim 6 (Currently amended): The method of claim 1 wherein the
9 motion capture data is mapped to control the movement of a virtual figure
10 displayed in a scene at the client.

11
12 Claim 7 (Currently amended): The method of claim 1 wherein the
13 motion capture data is generated by a body suit.

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15 Claim 8 (Currently amended): The method of claim 1 wherein the
16 motion capture data includes background data for use in producing a scene at the
17 server.

18
19 Claim 9 (Currently amended): The method of claim 1 wherein data
20 transfer from the server to the client is concurrent with the receipt of the time-
21 based data stream and motion capture data stream at the server.

22
23 Claim 10 (Original): The method of claim 1 wherein the time-based data is
24 voice data.
25

1 Claim 11 (Original): The method of claim 1 wherein the synchronized data
2 frames include one or more data channels, the server transmitting on the network
3 at a predetermined interval between synchronized data frames a descriptor packet
4 which describes each channel contained in the synchronized data frames such that
5 a client may join in progress a multicast of synchronized data frames.

6
7 Claim 12 (Currently amended): The method of claim 1 wherein the time-
8 based data is a pre-recorded audio track and the method further includes
9 synchronizing playback of the pre-recorded audio track at the server and buffering
10 of the pre-recorded audio track to allow for coupling with motion capture data
11 generated in time with the playback of the pre-recorded audio track.

12
13 Claim 13 (Original): The method of claim 1 further including sequencing
14 synchronized frames output from the server to the client to provide for ordered
15 playback of the synchronized frames to a user at the client.

16
17 Claim 14 (Currently amended): A method of packaging synchronized
18 frames of three-dimensional motion data and time-based data where each frame
19 includes one or more channels of data in a system in which synchronized frames of
20 three-dimensional motion data and time-based data are transmitted by a server over
21 a network to a client, the method comprising:

22 storing a last data value for each channel in each synchronized frame of
23 three-dimensional motion data and time-based data transmitted over the network;

24 retrieving new synchronized frames of three-dimensional motion data and
25 time-based data for transmission over the network; and

1 packaging and transmitting over the network only data for channels having
2 changed data values.

3
4 Claim 15 (Original): The method of claim 14 further including transmitting
5 a descriptor packet at a predetermined interval over the network, the descriptor
6 packet including channel descriptors for each channel in the synchronized frames.

7
8 Claim 16 (Original): An apparatus resident on a server for synchronizing
9 asynchronous time-based and three-dimensional motion data in a system in which
10 the time-based data and three-dimensional motion data are transmitted by the
11 server over a network to a client, the apparatus comprising:

12 a data retriever for retrieving a time-based data stream and a three-
13 dimensional motion data stream at the server, each of the streams comprising
14 frames of data;

15 a data stream synchronizer for buffering one of the time-based data stream
16 and the three-dimensional motion stream to produce two streams having
17 synchronized frames; and

18 a packetizer for packaging synchronized frames of three-dimensional
19 motion data and time-based data for use at the client for playback of synchronized
20 three-dimensional motion data and time-based data to a user.

21
22 Claim 17 (Currently amended): The apparatus of claim 16 further
23 including a multicaster for multicasting the synchronized three-dimensional motion
24 data and time-based data to clients couple to the network.

1 Claim 18 (Original): The apparatus of claim 16 wherein the packetizer
2 includes a storage device and a comparator, the storage device for storing data
3 values last transmitted over the network for each channel in each of the
4 synchronized frames, the comparator for comparing data values for new frames
5 with the data values stored in the storage device, the packetizer only packaging for
6 transmission to the client channel data for channels having changed data values as
7 determined by the comparator.

8
9 Claim 19 (Currently amended): A method for playing back time-based
10 and motion [[based]]capture data that has been synchronized comprising:

11 mapping the motion [[based]]capture data to control the movement of a
12 virtual figure in a scene displayed at a client; and

13 playing back in synchronization with movement of the virtual figure the
14 time-based data.

15
16 Claim 20 (Currently amended): A method of synchronizing asynchronous
17 three-dimensional motion data and audio data at a server computer in a system in
18 which the three-dimensional motion data and the audio data are transmitted by the
19 server computer to one or more clients, the clients providing a real time output of
20 synchronized motion and audio data, the method comprising:

21 retrieving an audio stream including voice data and a three-dimensional
22 motion data stream including one or more motion data channels at the server, each
23 stream including frames of data;

24 calculating a delay through the server for a frame of data on each of the
25 streams;

1 calculating a difference between the delay for the audio stream and the
2 three-dimensional motion data stream to determine which of the two streams is
3 faster;

4 variably buffering a faster of the streams to synchronize the audio stream
5 and the three-dimensional motion data stream resulting in two output streams
6 having synchronized data frames;

7 packaging the synchronized data frames;

8 multicasting the synchronized data frames to one or more clients over a
9 network; and

10 at each client computer, using the synchronized data frames for
11 synchronous playback of the audio and three-dimensional motion data for display
12 to a user.

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14
15 Claim 21 (Added): The method of claim 1 wherein the motion capture data
16 is sensor data.

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18 Claim 22 (Added): The method of claim 14 wherein the three-dimensional
19 motion data is sensor data.

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21 Claim 23 (Added): The method of claim 16 wherein the three-dimensional
22 motion data is sensor data.

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24 Claim 24 (Added): The method of claim 19 wherein the motion capture data
25 is sensor data.

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2 **Claim 25 (Added):** The method of claim 20 wherein the three-dimensional
3 motion data is sensor data.
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